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Reverse Logistics, Forward Thinking - How Smarter Returns Unlock the Next Big Leap In Retail Efficiency

Written by the Zebra Team

Returns happen. How you handle them makes a difference.

E-commerce has reshaped shopping and returns right along with it. As online orders soar, the volume of products being returned is growing faster than most operations can keep up. In 2024 alone, shoppers sent back an estimated $890 billion worth of merchandise, or nearly 17 percent of total U.S. retail sales, according to the National Retail Federation. Online orders return goods at rates about 21 percent higher than in-store purchases. But offering a good return policy is crucial for retaining sales; the NRF reports 76 percent of consumers consider free returns a key factor in deciding where to shop. As volumes surge, keeping the promise of modern retail means finding a faster, more sustainable way to process returns.

The hidden costs of returns handling

Zeta Global estimates that the cost of a return can be $20-$30 per return, due to factors such as labor. Every return represents a person opening the box, confirming what's inside, checking for defects, and printing a label before the item can be restocked or repaired. Multiplying these steps by thousands of packages a day adds up quickly. It's not just labor costs; every extra minute of handling time means more inventory sitting still. In a business where timing drives profitability, speeding up that return cycle is critical.

Boost your frontline's efficiency with AI-powered solutions

Returns don't have to be a bottleneck. Zebra's automated return inspection station eliminates the friction of slow, manual steps. Associates simply scan, set, and move on while **AI-driven vision** and **Intel® computing power** handle the tedious double-checking. The Aurora Vision Studio software identifies tears or damage, the **FS42 smart camera** captures data, **the ET Series tablets** display results instantly, and the **linerless printer** generates the right label for restocking or repair. With each return, the system learns and refines its accuracy, turning what was once a time-consuming process into streamlined returns and better workdays.

A smarter return in four steps

Here's how the new process works:

Step 1: Scan
An associate scans the return's barcode with a Zebra **FS42 fixed industrial scanner**, instantly matching the item to its order and return manifest.

Step 2: Inspect
The open box goes under the **AI-enabled smart camera. Aurora Vision Studio software** automatically analyzes the item's surface for tears, damage, or other anomalies.

Step 3: Grade
The **Intel-powered image processing** system determines whether the item is ready to restock, needs repair, or should be set aside for disposal.

Step 4: Label
Zebra's linerless printer sustainably produces a fresh label to route the item to its next destination.

With every cycle, the AI-enabled system learns how to do its job better. When technology handles the heavy lifting, people can focus on keeping products moving. That efficiency adds up to incremental business gains every day.

Fast decisions start at the Intel® Core™ processors

Speed like this is built from the inside out. The 4Sight XV6 Vision Controller, powered by Intel® Core™ i5 and i7 processors, turns camera images into real-time insight. While associates focus on moving products, the controller analyzes pixels, classifies defects, and sends clear results back to the tablet.

Intel's processors quietly drive the AI performance that keeps operations flowing. Zebra brings the ecosystem of scanners, software, and printers that turns Intel's computing power into practical action. The next-gen 4Sight XV7 will push that partnership even further and deliver more processing muscle for the next wave of computer-vision automation.

Faster training pays off more at the holidays

Considering holiday hiring to handle extra returns? You're not alone. The holiday return rate is, on average, 17 percent higher than the rest of the year, according to a 2024 NRF paper. The same paper surveyed retailers and found that 34 percent planned to hire seasonal staff to manage returns volume during the holidays, and 49% of that was staffing distribution centers and warehouses.

Zebra's automated return inspection station minimizes training requirements for faster onboarding. Associates don't need to memorize defect codes or manual grading steps; the system guides them with real-time AI insight. Faster processing means inventory turns sooner, keeping shelves stocked and customers satisfied.

Why act now?

For retailers, the payoff is clear. When every return moves faster, the entire supply chain benefits. Automating inspection can cut handling time dramatically, freeing associates to process more packages with fewer errors.

Add in linerless label printing, which eliminates label waste and reduces supply use, and the business case grows even stronger. A McKinsey and Company report in 2023 suggested companies might benefit from investing in circular solutions now to stay ahead of expected sustainability regulation, such as the Circular Economy Action Plan and European Green Deal. Over the long run, moving early could prove to be less costly than waiting.

AI-enabled inspection improves accuracy, reducing the human error that drives rework and waste. Fewer delays mean better inventory turnover, faster restocks, and higher resale value. And because the system learns and adapts, performance keeps improving. Investing in Zebra and Intel's reverse logistics solution is a smarter, cleaner, faster way to handle one of retail's biggest operational challenges.

See Zebra and Intel at NRF 2026

Experience automated returns processing firsthand with Zebra and Intel at NRF 2026 in New York City, January 11-13. See in person how automation and AI are reshaping reverse logistics and what it could mean for your business.